



Source Water Assessment Program (SWAP) Report For Westport Plaza

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- ? Inventory land uses within the recharge areas of all public water supply sources;
- ? Assess the susceptibility of drinking water sources to contamination from these land uses; and
- ? Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the
Massachusetts Department of
Environmental Protection,
Bureau of Resource Protection,
Drinking Water Program

Date Prepared:
November 6, 2001

Table 1: Public Water System (PWS) Information

<i>PWS NAME</i>	Westport Plaza
<i>PWS Address</i>	655 State Road
<i>City/Town</i>	Westport, Massachusetts
<i>PWS ID Number</i>	4334018
<i>Local Contact</i>	Bill Pirraglia
<i>Phone Number</i>	508 679-0197

<i>Well Name</i>	<i>Source ID#</i>	<i>Zone I (in feet)</i>	<i>IWPA (in feet)</i>	<i>Source Susceptibility</i>
Well #1	4334018-01G	170	485	High

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

Westport Plaza is a privately owned two-story commercial Plaza. Current tenants include a credit union, two restaurants, pharmacy, liquor store, florist, accountant, dance school and floor covering store. Well #1 depth is thought to be 35 feet. Well #1 is located in a well pit approximately ten feet from the Plaza building and 30 feet from the Southern property line. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers (i.e. clay) that can prevent contaminant migration. The average daily withdrawal for the wells is limited to 3815 gallons per day, based on the current Zone I of 170 feet and Interim Wellhead Protection Area (IWPA) of 485 feet. The 3815 gallons per day value is based upon Title 5 water use estimates for the Plaza. The IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual recharge area to the well may

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

be significantly larger or smaller than the IWPA. Please refer to the attached map of the Zone I and IWPA.

Westport Plaza has been placed on increased monitoring frequency for bacteria due to the presence of a septic system within the Zone I. Additionally, Westport Plaza has been placed on increased monitoring frequency for nitrate due to detection of nitrate > 5.0 milligrams per liter. Although the maximum contaminant level (MCL) has not been exceeded 310 CMR 22. 06(7) (c) state's relevant part, that for all public water systems, their repeat monitoring frequency for ground water system shall be quarterly for at least one year following any one sample in which the concentration is > 50 percent of MCL. MCL for nitrate is 10 milligrams per liter. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1. The well serving the facility has no treatment at this time.

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Inappropriate Activities in Zone Is;**
2. **Septic System in Zone I,**
3. **Storage, Use and Handling of Oil/Hazardous Materials in Zone I,**
4. **Storm water.**

The overall ranking of susceptibility to contamination for the well is High, based on the presence of at least one High threat land use or activity in the IWPA, as seen in Table 2.

1. **Zone Is** – Currently, Well #1 fails to meet DEP's restrictions, which only allow water supply related activities in Zone I. The Zone I for Well #1 contains septic systems, the Plaza building, homes, a storage trailer, roads, and parking areas. The public water supplier does not own and/or control all land encompassed by the Zone I. The Southern portion of the Zone I is not owned by Westport Plaza. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

Recommendations:

- V To the extent feasible, remove all non-water supply activities from the Zone I to

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Storage, Use and handling of oil/hazardous material	Well #1	Well #1	High	Several storage containers
Parking, driveways & roads	Well #1	Well #1	Moderate	Limit road salt usage and provide drainage away from wells
Residential	Well #1	Well #1	Moderate	Lawn care, gardening, septic systems, household hazardous waste, heating oil storage
Septic System	Well #1	Well #1	Moderate	Refer to septic system brochure in the attachments
Storm water	Well #1	Well #1	Low	Several catch basins are located in IWPA with access road and roof runoff is Zone I
Structures	Well #1	Well #1	-	Non-water supply structures in Zone I

* -For more information on Contaminants of Concern associated with individual facility types and land uses please refer to the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400-foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

comply with DEP's Zone I requirements.

- V Do not exceed the average daily withdrawal limit for this public water system of 3815 gallons per day.
- V Well #1 is a vault/pit installations. Pit installations for water supply wells are not approved by the Department due to safety concerns associated with confined spaces, as well as the potential for the flooding of the Wellhead that could affect the sanitary quality the water being delivered. Consider extending the Wellhead to 24 inches above the final grade of the surface as part of future modifications to the system.
- V Do not use or store pesticides, fertilizers or road salt within the Zone I.
- V If the Plaza intends to continue using the structures, driveways, and parking areas in the Zone I, use BMPs and restrict activities that could pose a threat to the water supply.
- V Due to the proximity and number of potential sources of contamination, the Department recommends, and it may be required in the future, that the system investigate the availability of connecting to the municipal system.

2. **Septic Systems** - Septic systems for several private residences are located within the Zone I of Well #1. Additionally, the septic system for Westport Plaza is located within the IWPA of Well #1. If a septic system fails or is not properly maintained it could be a potential source of nutrients and microbial contamination. Improper disposal of household hazardous chemicals to the septic system is a potential source of contamination to the water supply.

Recommendations:

- V Educate residents and tenants on private septic systems about using cleaning compounds that are safe for the septic system, and on proper disposal practices, i.e. only sanitary waste in the septic system. Tenants and residents should dispose of used oil, antifreeze, paints, and other household chemicals properly-not in septic systems. Information on septic systems can be found at Massachusetts DEP website <http://www.state.ma.us/dep/brp/files/yoursyst.htm>
- V Septic system components should be located, inspected, and maintained on a regular basis. Refer to attachment for more information regarding septic systems.

3. **Storage, Use and Handling of Hazardous Materials in Zone I** - Several dumpsters, a large storage trailer, and several other storage containers which contained oil/hazardous material storage are located within the Zone I. The oil/hazardous material storage (e.g. gasoline, paint, petroleum products, cleaning supplies, etc.)

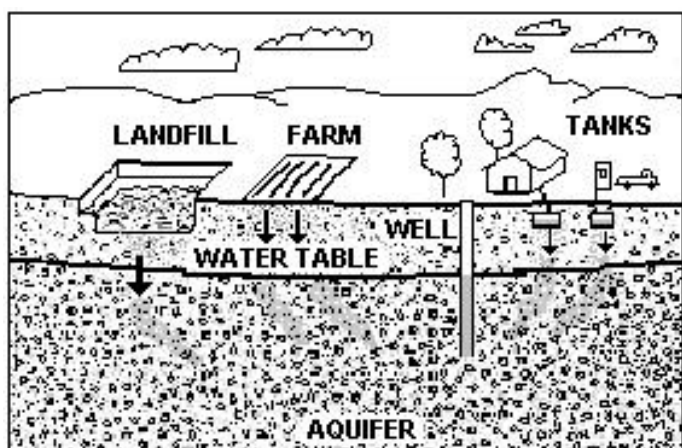


Figure 1: Example of how a well could become contaminated by different land uses and activities.

poses a potential threat to the well due to its proximity and potential for accidental release.

Recommendations:

- V Relocate dumpsters and hazardous product storage to a location outside of the Zone I and provide containment and exercise caution when using and storing these products.
 - V Educate tenants on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff and certified operator. Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. Post labels as appropriate on raw materials and hazardous waste. To learn more, see the hazardous materials guidance manual at www.state.ma.us/dep/bwp/dhm/dhmpubs.html.
4. **Storm Water** – Catch basins transport storm water from the roadway and adjacent properties to the ground. As flowing storm water travels, it picks up debris and contaminants from streets, parking areas and lawns. Common potential sources of contamination include lawn chemicals, pet

For More Information:

Contact Mark Dakers in DEP's Lakeville Office at (508) 946-2847 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at:

www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws/, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been provided to the public water supplier, and town boards.

waste, leakage from dumpsters, household hazardous waste, and contaminants from vehicle leaks, maintenance, washing or accidents.

Recommendation:

- ✓ Street and parking lot sweeping reduces the amount of potential contaminants in storm runoff. Work with the Town to have the catch basins inspected, maintained, and cleaned on a regular schedule.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

2. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the well's susceptibility to contamination. Westport Plaza should review and adopt the **key recommendations** above and the following:

Zone I:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Conduct regular inspections of the Zone I. Look for illegal dumping, and evidence of vandalism.
- ✓ If it's not feasible to purchase privately owned land within the Zone I at this time, consider a conservation restriction that would prohibit potentially threatening activities or a right of first refusal to purchase the property.
- ✓ Consider well relocation if Zone I threats cannot be mitigated.

Training and Education:

- ✓ Drinking water protection signs were not observed during the SWAP site visit. Post drinking water protection area signs at key visibility locations.
- ✓ Educate residents on proper application of pesticides and fertilizers.

Facilities Management:

- ✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. To learn more, see the hazardous materials guidance manual at www.state.ma.us/dep/bwp/dhm/dhmpubs.html.
- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.
- ✓ For utility transformers that may contain PCBs, contact the utility to determine if PCBs have been replaced. If PCBs are present, urge their immediate replacement. Keep the area near the transformer free of tree limbs that could endanger the transformer in a storm.

Planning:

- ✓ Work with local officials in Westport to include Westport Plaza's IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands.

Keep the phone number of a bottled water company readily available.

- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Funding:

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet. Please note: each program year the Department posts a new Request for Response for the Grant program (RFR). Other funding

opportunities are described in “Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation” at <http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf>.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Fact sheet
- Your Septic System Brochure
- Fertilizer Use Fact sheet
- Pesticide Use Fact sheet
- Wellhead Protection Grant Program Fact Sheet